

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V EXAMINATION – SUMMER 2025

Subject Code:3151912

Date:17-05-2025

Subject Name:Manufacturing Technology

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define Manufacturing processes and enlist various manufacturing processes. **03**
- (b) Explain properties of moulding sand. **04**
- (c) Write difference between Hot rolling and Cold rolling. Explain the terms: Bloom, Billet, Slab, Plate and sheet. **07**
- Q.2** (a) Enlist the various type of patterns used in the casting process. **03**
- (b) Sketch different types of cores used in the foundry practice. **04**
- (c) Explain the casting defects in detail with diagram. **07**
- OR**
- (c) Explain various types of pattern allowances with a neat sketch. **07**
- Q.3** (a) State the purpose of coating on an arc welding electrode. **03**
- (b) Sketch the four types of basic welding joints used in welding. **04**
- (c) Discuss the TIG welding process setup with the help of a neat sketch. Also enlist advantages, disadvantages, and applications. **07**
- OR**
- Q.3** (a) Classify the welding process in detail. **03**
- (b) Explain the types and importance of polarity in electric arc welding process with diagram. **04**
- (c) Sketch the three types of flames used in the oxy-acetylene welding process. Give the uses of each. **07**
- Q.4** (a) Explain sheet-metal working processes: Shearing, Piercing and Blanking. **03**
- (b) Distinguish between wire drawing and tube drawing with neat sketches. **04**
- (c) Classify extrusion processes and explain forward and backward extrusion process. **07**
- OR**
- Q.4** (a) Define following terms; Deep drawing, Coining and Embossing **03**
- (b) Write the significance of recrystallisation temperature in metal forming process. **04**
- (c) Enlist the various type of presses used in forging. Explain with neat sketch. **07**
- Q.5** (a) Why do we require high-quality surface finish components? **03**
- (b) Explain finishing process: 1. Honing 2. Lapping **04**
- (c) Explain Injection moulding process for plastic, by stating its principle of operation, advantages, limitation and applications. **07**

OR

- | | | |
|------------|--|-----------|
| Q.5 | (a) Differentiate Thermosetting plastics and Thermoplastics | 03 |
| | (b) Explain calendaring process. | 04 |
| | (c) Illustrate Barrel Tumbling and Burnishing process with a neat sketch. | 07 |
